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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,031	01/12/2001	Robert H. Halstead JR.	09612.1014-02000	1846
22852 7590 08/27/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER KANG, INSUN	
			ART UNIT 2193	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/760,031	Applicant(s) HALSTEAD ET AL.	
	Examiner Insun Kang	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/15/2007, 8/10/2007, and 6/14/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the RCE amendment filed on 8/15/2007, 8/10/2007, and 6/14/2007.
2. As per applicant's request, claims 1-9, 11-19, 2124 have been amended and claims 25-30 have been canceled. Claims 1-24 are pending in the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Per claims, 1, 11, 21, and 22, it is unclear to what options in the statement "options, each of the options" they are referring. Interpretation: defined options.

As per claims 2-10, 12-20, 23, and 24, these claims are rejected for dependency on the above rejected parent claims.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
6. Claims 11-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 11-21 are non-statutory because they are directed to a system that does not have physical structural elements and the system comprises only instructions that are disembodied arrangements so as to be called a "computer program" or compilation of facts, information, or data *per se*, without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by a computer ("acts") or computer storage medium so as to enable the computer to perform the claimed program. With no other structure in the independent claims to rely on, the alleged "system" of the claims turns out to be non-statutory for being a computer program (software system) *per se*. Therefore, the claims are non-statutory.

7. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101. http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

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ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-27, 29, and 30 of copending Application No. 09/759,697 and claims 1-3, 5-12, 14-21, and 23-26 of 09/759,695. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to substantially the same invention of defining an object with fields with preallocated memory space and options without preallocation of memory space, notifying through a change handler, option binding, etc.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-8, 11-18, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLennan ("Object-Oriented Programming with [incr Tcl] Building Mega-Widgets with [incr Tk]," 1996), in view of Linked list code examples from Data Structures and other Objects Using C++ by Main and Savitch (1997) listed in the cs.appstate.edu website (Index

of...examples; "Bag Implementation Using Linked Lists," 1998) hereinafter "Main," and further in view of Yasumatsu (US Patent 5,579,518).

As per claim 1, McLennan discloses defining an instance of a class, the class supporting defined fields, each of the fields having a field value, a field name, and a field data type, wherein memory space for each field value is allocated when the instance of the class is created (i.e. page 87 lines 24-35). McLennan does disclose options, each of the options having an option value, an option name, and an option data type, wherein the options having an option value, an option name, and an option data type (i.e. page 81 lines 1-3).

McLennan does not explicitly teach defining the option values without allocation of memory space when the instance of the class is created. However, Main teaches such dynamic allocation was known in the pertinent art, at the time applicant's invention was made, to save memory space such as the Bag implementation with linked list disclosed in Main (i.e. page 2, the Bag container and bga3.cxx implemented in linked list). It would have been obvious for one having ordinary skill in the art to modify McLennan's disclosed system to incorporate the teachings of Main. The modification would be obvious because one having ordinary skill in the art would be motivated to use dynamic memory that shrinks and grows as needed for efficient memory space usage as suggested by Main (i.e. page 2, the Bag container and bga3.cxx implemented in linked list).

McLennan in view of Main further discloses accessing a selected field value in the instance using a first single program code expression, the first single program code expression comprising an operator and the field name corresponding to the selected field value, and

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accessing a selected option value in the instance using a second single program code expression, the second single program code expression comprising the operator and the option name corresponding to the selected option value (i.e. page 87, source.head_ptr, source.many_nodes, in page 2, Bag::Bag(const Bag& source).

McLennan and Main do not explicitly disclose during compilation, determining whether at least one of the expressions accesses one of (a) the selected field value or (b) the selected option value; when it is determined that the selected a field value is being accessed, compiling the first single program code expression into a first code for accessing the selected field value; and when it is determined that the expression accesses the selected option value is being accessed, compiling the second single program code expression into a second code for accessing the selected option value. Yasumatsu teaches that data type check performed by a compiler was known in the pertinent art, at the time applicant's invention was made, so that information stored there can be determined (i.e. "static binding is possible at compile time," col. 3 lines 32-42). It would have been obvious for one having ordinary skill in the art to modify McLennan in view Main's disclosed system to incorporate the teachings of Yasumatsu. The modification would be obvious because one having ordinary skill in the art would be motivated to determine data type for appropriate memory allocation based on the data type.

As per claim 2, McLennan discloses a method as claimed in claim 1 wherein the selected option is associated with change handler code that is executed when the option value corresponding to the selected option changes (i.e. page 81, lines 4-13).

As per claim 3, the rejection of claim 2 is incorporated and McLennan further discloses a method as claimed in claim 2 wherein change handler code associated with the selected option is defined in a plurality of classes within a class inheritance hierarchy and the change handler code from each of the plurality of classes is executed when the option value corresponding to the selected option changes (i.e. page 81, figure 2-8; page 79, lines 3-9).

As per claim 4, the rejection of claim 1 is incorporated and McLennan in view of Main further discloses a method as claimed in claim 1 wherein the option data structure includes a type description of the option value, the method further comprising: during compilation of an operation on the selected option value, using the corresponding option data to process the operation (i.e. page 75, figure 2-3).

As per claim 5, the rejection of claim 1 is incorporated and McLennan further discloses: in a get operation to the selected option in the instance of the class, if the option value corresponding to the selected option has been set, getting the set option value and, if the option value corresponding to the selected option has not been set, getting the associated default value (i.e. page 79 lines 3-9).

As per claim 6, the rejection of claim 1 is incorporated and McLennan further discloses:

- defining a first instance of a first class, the first class supporting a first set of options, wherein the first set of options is associated with a first listing data structure of a first form;
- defining a second instance of a second class, the second class supporting a second set of options, without allocation of memory space for the option values when the second instance is created,

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wherein the second set of options is associated with a second listing data structure of a second form, the second form being different from the first form; during compilation, encoding an operation on the first instance as a method call to the first instance of the first class without regard to the form of the first or second listing data structure; and during compilation, encoding an operation on the second instance without regard to form of the first or second listing data structure (i.e. page 75, Fig 2-3; page 76, Figure 2-4).

As per claim 7, McLennan discloses a method as claimed in claim 1 further comprising: notifying the instance of the class of a change in the selected option value through a change handler identified by an option binding object, the option binding object being located by first searching a mapping data structure for any mapping from the option name corresponding to the selected option value to the option binding and, if no mapping was found, by then computing a mapping from the option name corresponding to the selected option value to the option binding object and storing the mapping in the mapping data structure (i.e. when you click on a file...Each time the view changes, pages 95-97; see the command handlers, page 64, page 81 lines 1-3; Figures 2-7 and 2-8).

As per claim 8, the rejection of claim 1 is incorporated and Main further discloses :

- each of the option items corresponding to a referenced option comprising an option in the instance that has been referenced, each of the option items having the options values and the option name corresponding to one of the referenced options, and the option items being arranged in a linked list; wherein the method further comprises, when a first option is

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referenced in order to set a first option value for the first option, checking the listing data structure for a first option item corresponding to the first option; when the first option item is found, setting the first option value in the first option item; and when no first option item is found, creating the first option item; setting the first option value in the first option item, and storing the first option item with the set first option value in the listing data structure (i.e. Bag implementation with Linked list).

As per claims 11-18, they are the system versions of claims 1-8, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-8 above.

As per claim 21, it is the data processing system version of claim 1 respectively, and is rejected for the same reasons set forth in connection with the rejection of claim 1 above.

As per claims 22-24, they are the product versions of claims 1, 7, and 8, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1, 7, and 8 above.

As per claims 26-30, they are the method versions of claims 1-6 respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-6 above.

12. Claims 9, 10, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLennan ("Object-Oriented Programming with [incr Tcl] Building Mega-Widgets with [incr Tk]," 1996), in view of Linked list code examples from Data Structures and other Objects Using

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C++ by Main and Savitch (1997) listed in the cs.appstate.edu website (Index of...examples; "Bag Implementation Using Linked Lists," 1998), hereinafter "Main," further in view of Yasumatsu (US Patent 5,579,518), and still further in view of Hostetter et al ("Curl: A Gentle Slope Language for the Web," World Wide Web Journal, spring, 1997, art of record) hereinafter "Hostetter."

As per claim 9, McLennan, Main, and Yasumatsu do not explicitly disclose a nonlocal option value applies to other instances of the class in a nonlocal option hierarchy. However, Hostetter teaches a nonlocal option value applies to other objects in a nonlocal option hierarchy (see Section3, Page 4, Lines 1-2, "The screen shot above reflects the fact the user has selected something besides the default color (red) and quantity (0)."). Color is a nonlocal option because all text in a given document is usually the same color. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hostetter into the method of McLennan, to comprise a nonlocal option value that applies to other objects in a nonlocal option hierarchy. The modification would have been obvious because one of ordinary skill in the art would have been motivated to implement properties in a dynamically bound environment using a deep binding mechanism.

As per claim 10, McLennan, Main, and Yasumatsu do not explicitly disclose that the nonlocal option hierarchy is a graphical hierarchy. However, Hostetter teaches that the nonlocal option hierarchy is a graphical hierarchy (see Section3, Page 4, Lines 12, "The screen shot above reflects the fact the user has selected something besides the default color (red) and quantity (0);"

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Section 4.3, Page 9, Lines 34-35, "text. Properties control the color, size and font family as well as indicating whether the text should be bold or italic."). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hostetter into the method of McLennan. The modification would have been obvious because one of ordinary skill in the art would have been motivated to represent a graphic image as a hierarchical tree of Graphic objects (Leaves of the tree are primitive Graphic objects which know how to draw themselves, usually after looking up the values of various properties).

As per claims 19 and 20, they are the system versions of claims 9 and 10 respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 9 and 10 above.

Response to Arguments

13. Applicant's arguments filed 6/14/2007 have been fully considered but they are not persuasive.

The Applicant states that: Main does not disclose a data item referenced by name using the dot operator.

In response to the above statement, the bag items are stored on a linked list. The number of nodes on the bag list and the head pointer for the list of items are referenced by name using the member selection operator (source.head_ptr, source.many_nodes, page 2). This member selection operator is known in the OOP.

Applicant's arguments with respect to Blainey reference have been considered but are moot in view of the new ground(s) of rejection.


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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 8:30-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MENG AI AN can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

I. Kang
Examiner


MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8/15/2007, 8/10/2007, and 6/14/2007.